LASAGNA GARDENING

An Introduction To No-Dig Vegetable Gardening using Sheet Composting

James Paris

Lasagna Gardening:

An Introduction To No-Dig Vegetable Gardening using Sheet Composting

By

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Introduction

Firstly to clear up any confusion, lasagna Gardening is known by a number of names including Layer Composting, Layer gardening, Sheet Composting or Lasagna Composting. Call it what you like but it all adds up to the same thing.

Easy weed-free, no-till gardening, that uses up as much organic waste as you can provide, that will in turn produce an abundance of crops at very little expense in both materials and labour.

In can be used alongside or in conjunction with other small gardening ideas, such as Raised Bed Gardening or Container Gardening. And it can be used in any area of the garden that gets sufficient sunshine for plants to grow.

Although some would claim it is a new idea, it is in essence a modern twist on an ancient concept, and has in fact been used under different names or descriptions since ancient times.

However the title ‘Lasagna Gardening’ alongside the others mentioned are indeed the product of the late 19th century till now.

In essence a Lasagna garden is a layered rubbish heap filled with organic material, either by accident or design. The ancient Scots for instance referred to this as a Midden. A place where all food waste and animal dung would be dumped.

It was most likely realised that some of the waste vegetables took root and thrived in these conditions, and soon the Midden itself was used to grow vegetable crops.

I myself have known of this method since I was a child, as my parents were both crofters in a remote area of Northern Scotland, near Montrose.

Of course things have changed a lot since then, and the concept of growing healthy organic vegetables in a rubbish heap has ‘evolved’ into the Lasagna Gardening style (amongst others) as we now know it.

A Popular Movement

No-Dig gardening (a generic term for gardening without the need for heavy digging) comes in many forms, from the Lasagna gardening methods described, to growing vegetables in Straw Bales, Raised Beds, and Containers of all shapes and sizes.

The ‘growth’ in interest can be attributed to many things, including expediency, the drive to produce Organic healthy food, shortage of garden space, etc. Add to this the fact that many ‘celebrity’ gardeners are now promoting this method of growing vegetables through the media and internet, and you soon have a popular movement of interested gardeners.

To be clear though, this is not ‘fad’ gardening. It is ideally suited to the age in which we live. It has indeed many advantages over traditional vegetable gardening, and some would argue that it is an example of re-cycling at its best, and most productive.

Are you ready to grow fantastic crops without all the heavy digging and maintenance of a traditional garden? Then read on, to get many reasons why you should perhaps try it for yourself..

Advantages Of A Lasagna Veggie Garden

Good Reasons For Lasagna Gardening..

1: Excellent Re-cycling: This is a great way to convert any old organic waste into fresh vegetables! Old newspaper, cardboard boxes, kitchen waste, etc. These can all be gathered and used to build up your lasagna vegetable garden. (More on usable materials in later chapters).

2: No Digging Required: This is a classic form of no-till gardening. The materials are simply thrown onto a layered heap, and the seedling or seeds planted in the pile.

The material does not get turned over at all, and the only digging required is the actual act of digging a small hole to plant your seedlings.

3: No Weeding: At least for the first few months of use, the lasagna garden does not require weeding. ,This is mainly due to the fact that you are using 'clean' growing medium, instead of weed-seed infested topsoil.

Some weeds will eventually make their way onto your lasagna garden heap, but these are easily pulled up from the soft composting material.

4: No Fertilizers required: As the layered heap decomposes it creates a nutrient-rich growing medium. This means that you save money and effort as the plants have all the nutrients they need to thrive.

It also means that you can grow 100% organic, chemical-free vegetables for the family!

5: An excellent use of non-productive land: If you are 'blessed' with hard Stoney or otherwise poor soil on which to grow anything, then this method could be just what you are looking for!

The layer garden can be laid out on any piece of ground – even concrete! Just mark out your area (more on this later) and pile on your materials to create a super-productive vegetable bed.

I could go on – but I’m sure you get the idea by now!

In this next chapter I will lay out exactly how to build your own lasagna garden, including more details regarding suitable and unsuitable materials to use.

Building A Lasagna Garden

Now we get down to the 'nuts & bolts' of lasagna gardening, and in particular how to go about the construction itself.

Step 1: Find a suitable position. As mentioned earlier, you do not need to worry about the suitability of the ground with regards to growing your vegetables. This means that with regard to the actual growing, there are really only two main criteria to consider, and they are water supply and natural daylight.

Of course depending on your situation you may have to consider predation by rabbits, deer or other critters that love to munch on fresh vegetables. You may even have to consider possible vandalism or theft.

With regards to the actual plants needs though, sun, water, and nutrients are the main considerations. The nutrients are already taken care of as the heap decomposes, with perhaps the possibility of a 'top-up' with organic fertilizer or tea.

Make sure that you are near to a water supply, as it can be a real drag if you are having to manhandle gallons of water to keep your veggies from expiring!

Most vegetables need a minimum of 8 hours sunlight to grow, so be sure to pick a suitable spot in the yard that is not too shaded to suit your particular choice of vegetables.

Also you should avoid setting up your lasagna garden under over-hanging branches or heavy dense foliage. This will not only take sunshine away from your plants, but can also lead to disease or insect infestation (especially aphids) amongst your vegetables.

Step 2: Collect your materials: What should you include in your lasagna garden? Basically everything that you put into your compost heap can be put into a lasagna garden.

This is a short list of materials that **should be** included in a compost pile or indeed lasagna garden.

Carbon (Dried Matter**):** Dried leaves, straw, wood chips, sawdust, dried grass, straw, cardboard, paper (not colored), small twigs.

Nitrogen (Green matter): Fruit & Vegetable scraps, lawn clippings, weeds, plant cuttings, animal manure (herbivores only), old flowers.

Materials **NOT to include** in your compost for a variety of reasons include..

Anything inorganic such as plastic, polythene, polystyrene etc. This should be a no-brainer as neither of these things decompose – but it has to be said :)

Pet Poop: Dog or cat droppings should NEVER be added to the compost heap, as this can add several disease organisms as well as larvae to the mix.

Fat, fish, meat, bones and dairy products: Should definitely not be added as they will attract rats and mice. They will also putrefy rather than decompose, which will cause your compost to smell badly.

Coal ash: The ashes from coal contain large amounts of sulphur which is bad news for most plants, however timber ash contains potash which is good especially for fruiting plants.

Coloured paper: The paper from glossy magazines or any other colored paper should not be included, as the colors contain many harmful or toxic chemicals.

Diseased plants: Never add diseased plants to the layers as they are likely to spread the disease to your new vegetables. Dispose of them by burning if possible.

Once you have gathered together a suitable quantity of material to form your lasagna garden – it should preferably be enough to form a heap 18-24 inches deep – then it is time to layer it up.

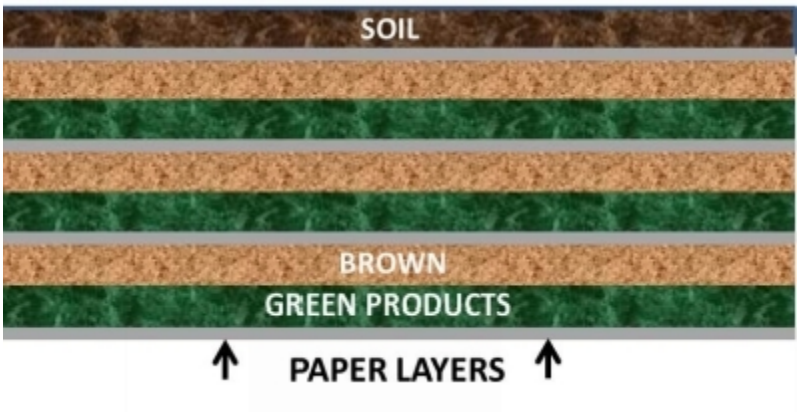
Step 3: Assembling the materials: Once you have the materials assembled you should roughly sort them into two categories, browns and greens.

The way it all works is this. The 'brown' material allows for ventilation or aeriation of the heap as well as adding carbon. The 'green' material adds all the needed nutrients such as nitrogen & potassium.

The more 'green' material you have, then the faster the heap will decompose, and indeed the hotter it will get in the process. This is the basic premise behind Hot Bed Gardening – an early season gardening method.

To make the lasagna garden, I opt for a mix of approximately 3-4 parts 'brown' material to 1 part 'green.' This allows for a longer composting process and produces good results throughout the growing season.

The diagram below give an example of a layered composting system. Whilst this looks nice and tidy in the diagram, the reality is that your lasagna garden can look like a dogs breakfast – but not to worry :)



The layer of soil in the above diagram is optional, as shall be explained in the following chapter.

Grey Color = Paper or cardboard material (avoid glossy mag's or rich colors).

Green = Organic nitrogen-rich vegetation such as grass cuttings, kitchen waste, manure, fruit etc.
Light Brown = Carbon material such as wood shavings, sawdust, small twigs/branches, shredded newspaper.
Dark Brown = A 3 inch layer of compost or soil.

To set up the lasagna system, start by laying out a few sheets of newspaper (5-10) or a layer of cardboard, and soak them thoroughly.

This can be laid directly over grass, weeds, whatever, as the paper/cardboard will stop the growth in its tracks.

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I did mention earlier that you can even do this on top of concrete? This is true as you are not dependant on the surrounding soil in any way for your lasagna garden to operate. However….Building it on concrete does lose the advantage of the natural process, where microbes and worms in **the soil** would help greatly in the composting process.

Yes it will still function ok as nature gets to work, but for best results it is better situated on soil or even a gravel bed.

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On top of this layer of paper, pile a thick layer of brown material then your green material, then add to this your brown material. This is in turn topped by more paper or cardboard.

Repeat this process (watering throughout) until you have a layered bed at least 18 inches deep. Top-off the bed with a final layer of paper or cardboard.

Alternatively if you want to begin growing vegetables immediately, top off the heap with 2-3 inches of good topsoil or better still a good growing medium such as a compost/peat/sand mix at 1/3rd each.

What now?

At this point there are a couple of choices open to you, depending on your particular circumstances.

If it happens to be the beginning of the growing season for you, then you can actually begin planting immediately by either topping off the pile with top-soil as previously described. Or alternatively just dig a small pot-sized hole in the top layer and fill it with soil to get your plants started.

If it is later in the season and you need to leave it for a few months before starting, then you can either just walk away and let the whole mix rot-down; or you can cover it over with a tarp and leave it till spring. This will speed up the decomposition process and allow the worms and microbes to do their thing undisturbed.

Remove the tarp in the spring and plant your veggies!

Bear in mind that as the heap decomposes, so the level will drop significantly over the ensuing weeks/months. This is to be expected and is merely a sign that the composting process is going as hoped.

Bit of a mess? Well yes it can look a bit of an untidy mess, however there are at least 3 simple solutions if you like your veggie plot to be nice and neat – and you don’t mind a little extra work.

The first method is to simply create a wooden frame or box exactly the same as you would for a Raised Bed garden, and fill it in with the lasagna composting method as described.

In the picture above you can see an example of a Raised Bed that is 2 feet high – which makes it easy on the ‘old back,’ since there is not a lot of bending over needed!

This box can be made using numerous different materials, anything that will contain the ‘mess’ within will do fine. Even chicken mesh can be used effectively to contain the infill. In fact this method helps in the composting process as it allows air into the heap.

The Raised Bed example above is admittedly large, however you can build it to any size that suits your needs – or material supply!

Another method which is perhaps more physical work but is less expensive to do, is the ‘trench style’ lasagna garden.

This involves digging out a hole or trench to the dimensions needed. Infill the organic material in exactly the same way as described earlier until it is 4 inches or so from the surface ground level.

Finish off by adding topsoil or growing mix until it is 2-3 inches proud of the surrounding ground level. This will compensate to some extent the sinking effect as decomposition takes place. At the end of the season the pit can be topped up again to bring it level with the rest of the veggie plot.

Yet another way, is in fact a combination of the first 2 methods. Instead of digging a pit 18-24 inches deep – which can involve some serious hard work, split the difference by digging a shallow pit only 6-12 inches deep and surround with a wooden frame to make up the difference.

For instance a pit dug at 6 inches deep will need a frame on top of 12-18 inches to make up a minimum 18 inches of composting material.

The diagram above gives one example of a semi-sunken pit for lasagna gardening. As an addition to this especially if you have water-logged or boggy ground, you could consider digging a sump at the bottom of the pit and filling with loose stones or crushed gravel to act as a drain.

The bottom line is that there is little you can do ‘wrong’ when building your lasagna garden. Just get a good mix of brown and green materials together and pile them up in an approximation of the manner described, and you will have a nutrient-rich bed in which to grow your veggies.

This method is also applicable to containers of many shapes and sizes, providing the container is large enough to infill with multiple layers of organic materials.

Planting Guide

So what exactly can you grow in a lasagna garden? The answer to this is easy – virtually anything that can be grown in a traditional garden!

Ok, so this is somewhat dependant on how you go about planting your veggies to begin with.

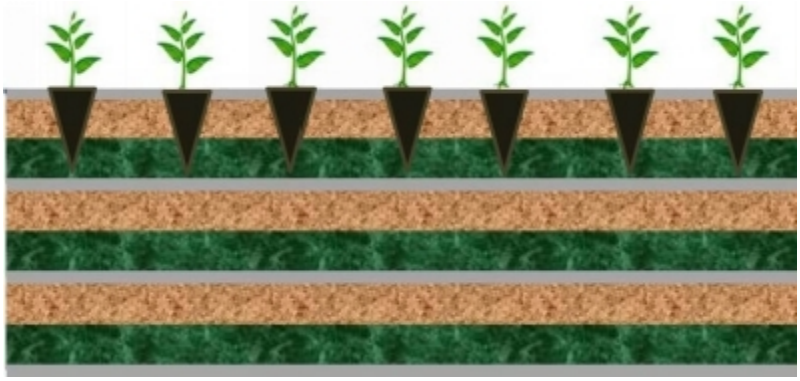
For instance if you are planting straight into the top of the heap with no covering of soil, then I would not try growing deep rooted plants such as carrots or parsnips – at least not until the heap has had several months to break down.

The reason for this is that the roots will immediately hit obstructions from the cardboard or other brown material. This will result in the root going off in different directions, in much the same way as it would if you planted it in Stoney soil. See the pic below…

I'm fairly sure you will agree that this is not a good look :) It is however easily avoided by either waiting for a few months (build it late autumn and plant it out in the spring) for the material to break down thereby allowing the roots 'safe passage' or by using the following method.

With a garden knife or sharp spade, cut down into the top of the heap at least 6 inches then move the spade from side to side so that a 'V' shaped channel is formed in the heap.

Fill this in with a good compost mix before sprinkling a thin row of seed along it. This will create a perfect environment for your carrots to grow in and should result in healthy, straight roots.



This is exactly the same method as you would use when growing carrots or parsnips in a Straw Bale vegetable garden, and it is extremely effective.

Top Ten Veggies

There are of course many hundreds of different vegetables you can grow yourself, depending on factors such as your location, growing outside or in a hothouse, or indeed what you personally like or prefer to grow.

For the beginner to vegetable gardening however, here are my top ten vegetables to try out and get the general feel for growing your own veggies.

Written as a general guide to planting vegetables in a ‘normal’ garden set-up, it should be noted that vegetables grown in a lasagna garden can be planted closer together than usual. This is due to several factors as listed below.

1: The growing medium is nutrient rich, therefore the plants are not fighting their neighbour for nutrients.

2: The fact that weeds are not so much of a problem in this gardening technique, means that you do not need to allow space for a garden hoe to get through.

3: As in point 1- The fact is that the veggies are not competing with weeds for nutrients and water.

With that said, here below is the list of ten popular vegetables to grow in the home veggie garden.

Beets:

Beets are a good choice for gardeners in Northern climates as they grow well in the cooler conditions. An excellent long-season crop as they are even able to survive frosty temperatures. Will prosper well in high phosphorous levels, but high nitrogen may result in excessive leafiness and small bulbs. For this reason it is not a good crop to grow in the same ground that legumes such as peas and beans have just vacated.

Planting:
Seeds can be planted indoors to give an early start, about 1-2 inches apart and ½ inch deep, but wait until soil reaches 50 degrees if sowing outdoors.

If temperature allows, planting can begin late March/April and continue until late in the season. Plantings can be spaced around 20 days apart to allow for Beets throughout the growing season.

A good crop for late – even winter crops in zone 9 or above.

Plant Care:
Thin out the plants when they reach about 2 inches high by pinching them off at the base, or snip with shears so not to disturb the ground. Leave a gap of around 3-4 inches between plants. Beets are prone to rise out of the ground when in the early stages of growth, making them prone to the

predations of slugs and other insects, so it is best to press the young beets carefully back down into the ground again until the root system is properly established.

Harvesting:
Beets are usually ready for harvesting in 50-70 days, though they can be harvested any time after the bulb appears. They can be left longer but will become tougher as they grow, and slightly woody.

A highly nutritious and tasty part of the beetroot plant is the leaves, they are also delicious and make a good addition to salad dishes if picked before they get old and tough.

Beets can be stored for many months as long as you have a dry cool dry place. After lifting the beets, remove any dirt and let the skins dry before storing. Beets can also be pickled, frozen or canned to preserve them.

Bell Peppers:

Second only to tomatoes as a garden favourite, Peppers come in many shapes, colours and sizes, hot or sweet – and modern-day chefs would be lost without them! A simple plant to grow if you have warm enough conditions (average 70 degrees F.) Bell Peppers are a great addition to your vegetable garden or greenhouse.

Planting:
Peppers will not survive in ground temperatures below 65 degrees F. So if you want to grow them outdoors this is the minimum requirement; in cooler climates it is best to grow in a greenhouse environment.

Seeds should be grown about 3-4 to a pot and the weakest discarded, before transplanting the healthy plants to your outdoor growing area (if you are able to grow them outdoors) after the spring frosts are well clear.

They should be planted about 18 inches apart, in rows about two feet apart. Placing a cardboard collar (try the toilet roll insert when the paper is finished!) around the stem of the plant, sunk about an inch into the soil, will protect against stem cutworms.

They are particularly susceptible to root shock if the ground temperature is below 60 degrees F. This can stunt the growth for several weeks so must be taken into consideration before planting out. Peppers have to be supported with canes or some other support such as nylon garden mesh.

Plant Care:
This is a thirsty plant so be sure to water regularly especially if you live an exceptional hot dry climate.
Make sure the fruits are properly supported and that the plant is not struggling under the weight.

Care has to be taken when weeding around the base of the plants as this can easily damage the shallow root system.

Watch out for Aphids and Flea beetles and blossom-end rot - which occurs when calcium is low – usually because of irregular or insufficient watering practices.

They are particularly prone to root rot if there is standing water around the stem, so good drainage is essential to maintain a healthy plant.

Harvesting:
Unlike some other vegetables that grow tougher as they age on the plant; Peppers grow in sweetness and flavour the longer you allow them to grow, and increase in their vitamin C content.

Remove the peppers by snipping the pepper stem, rather than tearing or breaking it from the plant.

Peppers will store in a fridge for 7-10 days in a plastic bag, or they can be sliced and frozen.

Cabbage:

Cabbage is a popular vegetable with many varieties, offering opportunities for many different growing conditions and taste preferences. Rich in iron, it likes cool temperatures and so is ideal for cooler Northern climates where it is best planted early spring and fall.

Planting:
For an early start to the season, begin by planting seeds indoors about 8 weeks before the last spring frost. The young plants can then be transplanted into your prepared area about two weeks or so before the last of the spring frosts.

During this time protect the seedlings under a cloche or some garden fleece, particularly in the cold evenings, until they are fully established and the cooler weather has gone.

Plant Care:
Young plants especially have to be protected from the predations of pigeons and rabbits, who will simply decimate your plants in short time if allowed! Garden fleece can be used to good effect in this matter – especially against the pigeons or cabbage butterfly. More robust measures such as rabbit mesh will maybe have to be employed against rabbits however.

Caterpillars from the cabbage butterfly, along with aphids and other insects love a bit of cabbage! Check out the section on Organic Pest Control to see how to discourage them from your cabbage patch.

Harvesting:
When the cabbage has formed a suitably firm head then it is ready for harvesting – usually in about 65 days or so. Remove the mature cabbage by cutting at the base of the head, but leave the stem planted along with the outer leaves. The plant will then send up fresh shoots to form new heads.

Leave just 3 or 4 of these heads to develop and they will form miniature cabbages in just a few weeks.

To store your cabbage head, make sure it is not wet to the touch, before wrapping in cling-film and storing in a cool place for no more than two weeks.

Carrots:

As it is for growing any vegetables, knowing how to grow carrots properly can save a lot of grief and heartache when it comes to harvest time. Carrots in particular are prone to a pest called the carrot fly (Chamaepsila rosae). This is a destructive pest also known to attack parsnips and celery, and so must be looked out for. That aside, growing carrots is not at all difficult if certain preparations are made that can ensure a good healthy crop of delicious fresh carrots for the table.

Just like onions, carrots are a chef's favourite as they can be included in a multitude of different dishes, and so are counted in the 'must have' vegetables in all the top restaurant kitchens. Being rich in vitamin A and calcium, carrots are delicious, steamed, boiled, and even roasted with a honey and orange glaze!

Ground conditions:
Carrots prefer a light sandy soil and preferably a situation where they can get most of the days sunshine; though they can stand a little shade, particularly in hotter climates. They must also be grown in soil that is free from stones, if you are to avoid the 'clubbing' effect that means the carrots grow all twisted and miss-shaped.

For this reason I always prefer to grow carrots in a raised bed, as it is easier to tend, and the soil can be better controlled to produce a sandy light soil, free from stones, that the growing carrots love.

Planting seed:
Once the soil or growing medium is prepared, then it is time to plant the carrot seed. This is a simple process that involves making a very shallow groove in the soil, and sprinkling the carrot seeds along the groove quite sparingly. Seed is then lightly covered up with soil. If planting before late march then they are best covered with a polythene cloche to encourage growth.

Rows should be approx. 6 inches apart. Shortly after the carrots have germinated, and have grown 2-3 inches in height; I would start to carefully thin out the plants to about 4 inches apart. To help avoid the dreaded carrot fly, be very careful with this process, causing as little disturbance as possible to the remaining plants. A handy tip would be to trim away the foliage of the seedlings you do not want, just below the surface.

Avoiding the carrot fly:
To begin with, after thinning remove all remaining foliage away from the carrot patch, as this will just attract the carrot fly.

To my mind the carrot fly is the carrots worst enemy by far. It is attracted to the smell of the carrot foliage, and from there descends to lay it's eggs at the base of the foliage where it meets the soil. It is the larva of the carrot fly that does the damage, by burrowing into the top of the carrot. First signs will be the leaves of the plant turning yellow, and the plant dying.

There is unfortunately no cure as yet for carrot fly devastation, but fortunately there are preventative measures you can take.

First of all is to keep in mind that carrot fly are low flying insects. For this reason it is best to grow the carrots in a raised bed if possible, about 18 inches (450mm) off the ground or more is preferred.

Next tip is to cover the plants with a fleece material to prevent the fly's from landing and laying their eggs on the carrots.

Try growing Allium plants such as garlic or chives, to help disguise the smell of the carrots and distract the fly from the growing carrots.

Harvesting/Storing:
From about July onwards, you now have a successful carrot crop to harvest – hopefully ! Mostly you just need to harvest the carrots as they are needed. However they can be stored by cutting off the foliage with sharp scissors about 1 inch above the carrot, then placing on a bed of dry sand, in a garden shed. Make sure the carrots do not touch, and inspect regularly to make sure there are none rotting.

This way the carrots can be kept fresh and wholesome over the winter months, but make sure they are kept frost-free and lightly covered over with sacking or some similar material. Knowing these basics of how to grow carrots should help ensure a healthy crop.

Cucumber:

A popular salad vegetable, this is a fast growing climbing plant that definitely prefers the heat; and if properly attended to, each plant will provide a number of fresh cucumbers throughout the growing season.

Planting:
The cucumber needs full sun and can be grown along the ground, or as a climbing plant growing up a trellis or garden net; therefore you must decide before planting just how you would prefer it to grow.

If planting from seed then grow inside in a warm place (65 degrees is needed for germination) and do not transplant outside until at least two weeks after the last frost.

Seeds should be sown in rows about 1 inch deep and 6 inches apart. Once they are ready for transplanting, then plant the young seedlings about 12-18 inches apart.

Cucumber is very susceptible to the frost so I would keep a fleece covering at hand to cover for the first week or so after planting.

Cucumbers prefer a neutral or slightly alkaline soil with a pH around 7. Compost with plenty of well-rotted manure and other organic material will produce an excellent crop.

Plant Care:
If your cucumbers are going to be lying on the ground, then lay them on a covering or straw to protect from the wet soil; this will also act as a mulch to prevent drying out. Hanging Cucumbers may have to be supported on the vine to prevent damage to the plant.

Cucumbers need constant watering as inconsistent watering can result in a small, bitter plant. However like most vegetables they will not tolerate over-watering. To avoid this, a quick tip is to stick your finger into the soil and if it is dry beyond the first joint then water is needed.

Harvesting:
Keeping your cucumbers harvested regularly will ensure a constant supply of fresh cucumbers. To maintain a healthy crop you should harvest when they reach 6 inches and over; or if choosing to pickle them, around 2 inches is ideal.

Keep picking them as they grow on the vine as the vine will stop producing if they are not picked, and those that remain will become tough and slightly bitter.

As they are 90% water, cucumbers are better stored wrapped tightly in plastic film. They will last at least 7-10 days in this condition if stored in a cool place.

Green Beans:

Growing runner beans (*Phaseolus coccineus*), is one of the most satisfying jobs around the vegetable garden for me. The reason I am enthusiastic about runner beans is that I am quite impatient by nature, and so can't wait for the crops to grow. This is where the runner beans come in handy – they grow so fast !

No sooner do you have the frame up, than they are reaching for the stars and in no time producing tasty beans. When planting runner beans, like any other plant really there are however a few steps to follow in order to get the best results.

Soil Conditions for Runner Beans:
Runner beans prefer a loamy soil mixed with a good compost mix, however they are a fairly forgiving plant and will grow in many soil types. Since beans take nitrogen from the air and deposit it in the soil, they need less fertilizer than most other plants and indeed are used in companion planting methods for this ability to deposit valuable nitrogen for other plants to benefit from.

Plant in full sun if possible, though some shade will be tolerated. They should be kept away from the wind, as they are likely to suffer from wind damage if too exposed.

Time for planting beans:
The time to plant your runner beans is after the last frost of the season, as runner beans are very susceptible to frost damage. Better to grow from seed in a cold-frame or greenhouse and then plant the young seedlings into the garden area. If there is a danger of a late frost, then it is better to cover at night with a light fleece to protect them.

Preparing for planting runner beans:
Before planting your runner beans, it is best to prepare the frame-work that will support them whilst growing. Mostly this is done with a wigwam type

of frame, made up from several canes attached at the top and tied around with string.

The runner beans are then trained to grow up the canes, securing as they grow. This is slightly different from Peas which will secure themselves with tendrils from the plant.
If planting seedling's then remove from the pot when they are well rooted, but not pot-bound in the container. Taking a small trowel, dig a hole big enough for the plug and place the plant in the hole, firming around the base with soil.
Planting out under a cloche for the first few weeks of growing will also protect against the frost and give them a quick boost as the soil warms up.

This will also protect your young plants from the birds. Pigeon's in particular can do a lot of damage to a young bean crop, if it is not protected. Another way of protecting the early plants is to cut the bottom of a plastic coke bottle, and place over the plant (make sure you remove the top). Naturally this system is a bit more difficult if you already have your canes in place, so think ahead to exactly how you plan to proceed.

Rodents just love to nibble on a tasty bean ! Watch out for these and if it is a problem try covering with fleece to distract the mice during the early stages

of growth. Many a bean crop has been destroyed by mice digging up the bean even before it has had a chance to sprout!

Caring for your Runner Beans:
Generally speaking, runner beans need very little looking after, during the season. Water well when flowering starts in order to encourage growth. For the bushier type of bean plants, nip out the growing tips as they reach the desired height.

Watch out for aphids, or caterpillars and take action at the first signs. Aphids can soon get out of control and be the cause of all kinds of plant disease, as well as contaminating your beans with a sticky mess !

Harvesting your Runner Beans:
All bean crops should be harvested when still young and small, for as they grow they can get quite tough and fibrous. Likewise they are best eaten immediately, or if headed for the freezer they should be blanched and frozen within the first few hours of picking to get the best flavor locked in.

Keep harvesting quite frequently, even if you do not need the beans. This encourages growth and ensures a steady supply of fresh succulent runner beans for the table. Beans can also be dried and stored for use in stews and casseroles, throughout the winter period.

Follow the same general advice for planting garden peas also.

Leeks:

Leeks are probably one of the most sought after vegetables for the kitchen table, and knowing how to grow leeks essential for the vegetable gardener. producing a delicious long white bulb, as well as green leaves that can be used to flavour casseroles and soups, as well as countless other dishes; the leek is rich in vitamin A and so a great addition to the average diet.

The leek is of course the national symbol of Wales, as is the Thistle for Scotland, the Rose for England and the Shamrock for Ireland. As such, it is a well-known vegetable around the United Kingdom in particular.

Along with the decision to grow leeks, come's the decision on whether to grow from seedlings or indeed whether to grow your leeks direct from seed. This is along with the kind of leeks you wish to grow, and the ground conditions etc that are necessary for a good crop. These and other facts about growing leeks, will be explored in this article.

Ground conditions:
Leeks will grow in a wide mix of soil conditions, however to grow a good healthy crop of top leeks, there are certain rules you must follow - as is in fact the case with most plants of course.

First of all, it should be noted that the one ground condition that leeks do not thrive in, is boggy ground. So choosing good well drained ground in which to plant your seeds or seedling's is a first step to growing leeks.

Secondly, to produce the best crop, leeks should be grown in ground that has been heavily manured the previous year if possible. The reason for this is that if you plant leeks in freshly manured ground, then you will produce a very leafy crop which can be quite tough and stringy. Well-rotted compost is ideal to dig in before planting your leeks if organic matter is needed to enrich the soil.

Sowing Leeks - From seed:

If you are Sowing leeks from seed, then they should be sown very thinly about 1 inch (25mm) apart, in drills about 6 inches (150mm) apart. Plant just about 1/4 inch below the surface and lightly cover up. Sowing should be in the early spring around April time. If sowing direct into the seed bed, then placing a cloche over them for the first three weeks or so will encourage early growth as well as protecting from a spring frost.

After about two-three weeks, the leeks should have germinated. The next step is to thin out as soon as possible, so that the leek plants around two inches apart. When the plants are about 8 inches high in the early summer, then they are ready to plant in their permanent positions - if they are not already there. In any case they must now be thinned out to about 10 inches apart.

When re-planting your seedlings, use a dibber or a sharp stick to make a hole around 6 inches deep by two inches wide. Take your leek plant and trim the roots down to about one inch long (25mm) and clip just a little of the top of the leaves. After placing the leeks in the holes, top up with water. This will wash the soil around the base of the roots and enable the plant to get established quicker. Fill in the hole around the young plant.

How to grow leeks - in a trench:
Another way of growing leeks is the trench method, this is done by simply digging a trench in the planting area, about 1 foot deep (250mm) and placing about three inches of well-rotted manure at the bottom. The manure should be covered by about 6 inches of soil. Carefully plant the leeks as described above and be sure that they are firmed around and perfectly upright. Plant about ten inches apart. If more than one trench is required, then dig them about two feet (600mm) apart in case the sides collapse during the work.

Caring for your leeks:
During the growing period, the leeks need minimal attention to be sure that the weeds are kept under control, by lightly hoeing between them. This helps to keep the soil loose which in turn helps with moisture retention. Another thing particular to leeks is Blanching.

This is a process designed to keep a nice length of white soft edible leek at the stem of the plant. Rather than letting it all go to leaf. One way to do this is to raise up the soil around the leek as it is growing, similar to the way that a potato harvest can have the drills raised around the young plants, to encourage growth of the tubers and also to stop the potatoes becoming exposed to the sun.

The problem with blanching your leeks is that they can become subject to rot, especially if the soil is particularly wet. This can however be prevented by fitting a collar to your leeks. This is simply a tube about 3 inches in diameter and up to 12 inches long. Push the collar into the soft earth around your leeks at or near the end of the growing season, usually around mid to late August, depending on the weather.

In the above picture the collar is cut from plastic pipe to deter nibbling mice! However it collar can be made from almost anything, even brown paper tied on with elastic bands.

The soil is then piled up against the plant as described. Taking these steps will help ensure that your leek harvest, which should be ready from late August right through to the late spring, is in peak condition and ready for the pot !

Leeks grown like this with a long white tuber, makes an absolutely tremendous 'leeks in cheese sauce' dish - one of my favourites.

Harvesting:

This should be done as and when you need them, leaving them in the ground until needed. Dig the leeks up with a garden fork, rather than just pulling from the ground, as this will result in you holding onto nothing but a handful of leaves! If you have to harvest them all, then store either in a box of sand in a cool place; or keep in a cool trench at the side of the plot if you need it for another harvest. Cover the roots lightly with soil, and pick when you need them.

Leek bulbs:
A handy by-product of leeks that have been left until the following summer, is leek bulbs. If the leek has gone to flower, then simply nip out the flower stems to get a nice harvest of leek bulbs at the stem of the plant in the summer. These can be used as onions or shallots for casseroles and stews etc .

Onions:

To begin with, we must decide on whether to grow the onions from seed or from onion sets. The fact is that it is generally thought much easier to grow onions from sets rather than from the seeds themselves.

It is also more likely that you will have a successful onion crop if you grow from the onion sets, unless you are a more experienced gardener and are well used to the intricacies of germinating and growing vegetables from seed.

How to grow onions - from sets:
As mentioned, it is generally thought of as a more guaranteed way to produce a good crop of onions, if you grow from onion sets. There are a few basic things to go think about, before you simply plant your onion sets in the ground however. A few general rules of thumb to ensure your efforts are productive and the expenditure worthwhile, from both a financial and practical viewpoint.

Soil Condition:
Firstly, it is not considered wise to grow onions in the same bed for more than 3 years running, unless the previous crop has been disease free, and the soil is well fertilized and able to cope with the demands of the growing onions.

As with most vegetable crops, it is better to rotate your plants around the growing area if this is possible, in order to 'spread the load' and give each plant the best possible chance of solid growth.

Onions should be planted as early as possible (around late Feb) to give as long a growing period as possible, in a soil ph of between 6 and 7.5 and should be planted in ground, that is well raked out to produce a fine tilth for planting the onions sets into. Preferably you will have turned over the ground and added some well-rotted manure the previous Autumn, this will ensure a good strong growth in the spring - if not; then remember it for next year :)

Planting:
After pressing down the area a little (onions prefer a firm bed), plant the onion sets about 4 inches apart, in rows set about 1 foot apart. This gives roof for the hoe when it comes to weeding between the rows. Plant the onions in a small hole made with the trowel, and cover them up to the neck in soil.

Planting them like this will help prevent them climbing out of the ground as the roots start to take hold; with that in mind however, you will most likely have to re-set then a few weeks after planting to be sure this does not happen. A small sprinkling of grow-more will help at this stage to give the onion sets a quick boost.

Protecting from Birds:
Onions are not susceptible to birds like pigeons, in the same way that say for instance lettuce or cabbage is. However they are prone to inquisitive birds like Blackbirds and Crows, pigeons etc, that will pick them out of the ground and leave them lying on the surface. This is only usually a problem in the early stages of growth, and when the onion sets are properly rooted it is not so much of a problem. Nevertheless, if you are badly bothered with this happening to your onion sets then it is as well to put a fine mesh over them to protect the sets in the early stages of growth.

Harvesting:
Onions are ready to pick, usually around August, when the foliage becomes yellow and withers. Pick a dry day if possible and lift gently from the ground, leaving the onions to dry where they are for a day or two. They are then ready to store in a cool dry place, where they will last through-out the winter - provided you keep them free from frost damage.

Storing:
The dried withered Shaw's can be pleated together, enabling them to be hung up in bunches from the ceiling of your garden shed for instance. After about two weeks of drying out, the onions are ready to eat and should provide you with a fresh supply for the next few months - if you have grown enough!

Quick tip: Eat the ones with the thick necks first, as they do not last as well.

Potatoes:

Potatoes are perhaps the best vegetable to begin with if you are a new gardener, or if you have limited experience of growing vegetables, growing potatoes included. The reason is that potatoes grow in many types of soil conditions, and are fairly hardy against the weather, but do prefer cooler conditions.

Once the potato shaws are through, they soon grow to block out any sunlight around their roots, which means that there is seldom any need to weed them, except in the most extreme of conditions - perhaps where the plot had not been properly weeded.

There can be few things more satisfying to a gardener, than digging up the potatoes at the end of the growing season. The reward for all your labours suddenly comes to the surface, it's a bit like a treasure hunt really - except that this is a treasure that you have planted, and are now getting it back with interest !

Buying Seed:

As well as knowing how to grow potatoes, you must know what kind of potatoes to grow. There are many different varieties of potatoes, some for baking, some for mashing. Potatoes that make the best fries etc etc. First rule though, especially to start with, is to find out just what varieties grow best in your area. The easy way to determine this is to go to a local supplier (not a large chain) as they will most probably stock the best varieties of potatoes for your specific region.

You must start with buying seed potatoes that are specifically reared for the purpose. You could just plant potatoes from the supermarket, however this is not such a good idea as they may have been sprayed with chemicals to prevent sprouting whilst in the shop for sale.

You can in fact just plant potato peelings, if you are really stuck. As long as the potato peelings have an eye on them, they will grow - quite amazing really. I know I have in the past produced potatoes just from the peelings, though not the best crop - it is nevertheless possible, if you are on a very tight budget for instance.

Preparing Seed Potatoes:
The seed potatoes will often have begun to sprout, before you even get them out of the bag; this is a good thing. If not, then cover them over with a sack or generally keep them in a dark cool place for a few days, until they have sprouted even an inch or so. This is known as ‘chitting’ and means that they are ready for planting.

Preparing the ground:
Ground preparation for growing potatoes, is fairly straight forward. In fact potatoes are an excellent first crop where perhaps nothing has been cultivated before, as they are good for breaking up the ground. The soil just has to be dug over, preferably at the end of the previous growing season; and then raked out to pick up the worst of the stones and weeds.

When this is done, then simply string out a straight line, as a guide. Then run the corner of your Dutch hoe along the line to create a shallow groove. To this you can add a sprinkling of ‘grow more’ or general fertilizer, before placing the seed potatoes about 10 inches (250mm) apart along the groove.

Continue this procedure keeping the lines about 24-30 ins (600-750mm) apart, to allow for the next stage.

Planting:
Place the potatoes shoot side up in the groove. It is often said to break away some of the shoots and just leave one or two, personally I don't bother with that and just place them as they come. It doesn't seem to affect my potato harvest either way.

When this is done, then pick up the Dutch hoe again and lift the soil, first along one side, and then the other. This will form a mound along the length of the track, in which the potatoes will grow.

Some people I know, avoid this step and just place the potatoes in the ground without forming drills along the line of the crop. In my view this is the lazy man's way out, and is a mistake as it will lead to a crop that is more difficult to harvest, resulting in broken potatoes. It will also mean a poorer harvest in terms of the potatoes produced.

Back to creating the drills. After the first lift, then you wait until she shaws present themselves through the earth for a couple of inches. Go over the drills again with the Dutch hoe, and lift the soil to cover the new growth.

That's it, job done! As the potatoes grow then water them if need be, and look out for any predations of any kind. All being well then you can look forward to a harvest of great fresh grown potatoes in the Autumn.

Plant Care:
One word of caution is to look out for the signs of potato blight. This is a virus that can sometimes attach to and destroy your crop, and usually takes effect just before harvest time. The first sign of potato blight is a sudden yellowing of the leaves, which soon begin to rot and fall over.

This is a disease that starts in the leaves and goes down into the tuber itself. Rather than try to prevent this happening, which is very difficult. I often harvest the entire crop before the disease has time to infect the potato. Ok, the potatoes may not have grown to their fullest potential, but at least I will have a partial crop of good healthy spuds.

An easy way to tell if it is to late, is to cut one of the tubers in half. You will see a dark vein throughout the tuber itself. If this is the case then simply dump them – not in the compost tip though, as the virus can remain in the soil for years.

If you try and store potatoes that have the potato blight in them, you will find that they will rot down to a smelly mush – really does spoil your day if you reach into a bag for your potatoes and you sink wrist deep into a rotting spud!!

Harvesting/Storage:
Potatoes can be harvested throughout their growing cycle, as soon as tubers begin to appear; this is particularly the case if you are happy with small 'new' potatoes renowned for their flavour. However to get the best out of your crop, wait until the leaves and shaws dry out at the end of the growing season, then lift with a garden fork – removing as much of the soil as possible before storing in a cool frost-free place.

The potatoes will last right over the winter if protected against the frost. This can be easily achieved in a barn or shed by covering with straw or sacking.

Tomatoes:

Growing Tomatoes, or any vegetable for that matter, can be a very rewarding and satisfying thing to do. Not only do you have the satisfaction of eating quality vegetables produced by your own hand, but you can also save a small fortune on the shopping bills as well – a real win, win situation.

As always when growing any vegetable, we must first of all decide just where we plan to grow them, For instance growing tomatoes outdoors in the deep south of the USA is just a little different from growing them in Scotland where they definitely need the benefit of a heated greenhouse!

Soil conditions as well as weather or temperature conditions, have always to be taken into account. Tomatoes thrive in full sun and in a temperature of between 70F / 21C and 89F / 29C, and thrive best in a well fertilized soil especially when the fruit is starting to grow on the stems.

Planting:
Although they can be grown from seed – which will give you a better choice of varieties – I find it preferable to buy the young plants at about 6-8 inches tall and transplant them into the prepared area.
They prefer well-drained compost with plenty of organic matter and well-rotted manure. Support will have to be provided in the form of canes, string, mesh or tomato cages. This is especially so in the beefsteak varieties (some weighing up to 1lb), that will produce a crop liable to put a heavy strain on the stem if not properly supported.

When feeding organic Tomatoes – which should be started when the first fruits start to appear - I always prefer a ‘Tea’ mixture of horse manure mixed with water, when it comes to ‘feeding time’, which would be about a ladle full once or twice a day when the tomatoes are in full growth. It goes without saying that care must be taken when handling any kind of manure or rotting material.

The cleaner way would be of course to just go for a more commercial tomato feed – there are loads on the market – however just as many precautions have to be taken when handling chemical feeds also, so I suppose it's a matter of choosing your 'poison'!

Organic growing methods are most certainly in the ascendancy though, and feeding methods I used as a boy to save money, are now all the rage – go figure.

Greenhouse Tomatoes:
Quite apart from the fact that tomatoes have to be grown in greenhouses in m any northern regions that are not warm enough for them; growing tomatoes in a greenhouse means that you can start a lot earlier in the season, just make sure that you have a small heat source going to keep away a late frost or the cool spring evenings.

Tomatoes can be grown in many types of containers, indoors and out. However be aware that they cannot stand frost at all, so be sure to protect them from it at all costs.
As the season progress and the temperature heats up, then it is time to open the vents to try and maintain a constant temp around 80F or so. Care must be taken to water them regularly, and try and avoid splashing the leaves of the plant as this will result in the leaves being burned in the hot sun.

As the plants grow, and the tomatoes start to show, then I would normally trim away the excess leaves about halfway up the plant. This will concentrate the plant on producing tomatoes and not just filling the leaves. Side shoots should also be nipped away using your thumb and forefinger, as they will just take energy away from your tomatoes in the main stem.

Avoiding pests:
Pest control is an on-going labour for all gardeners, without doubt. Growing tomatoes in a greenhouse means that they are perhaps not quite so prone to the ravages of caterpillars, they can usually be fairly easily spotted and disposed of if they do appear. However Tomato plants are very susceptible to the ravages of Aphids such as greenfly and blackfly . To control Aphids with the use of chemicals is probably the most popular and perhaps the easiest.

It has to be said however that any chemicals that you use on your food plants, is likely to remain to some degree at least on the fruit or vegetables treated. The solution may be to go Organic and consider other alternatives to chemicals, such as a tablespoon of Canola oil and a few drops of Ivory soap into a quart of water. Shake the mixture well and pour into a spray bottle. Spraying from the top of the plant down, be sure to get the underside of the leaves for critters hiding there.

Support:
Just to emphasize the advice above - there is no definitive way of supporting your tomato plants as they grow, but they must be supported. Canes are the most popular, although string set into a spike in the ground at the tomato plant base and tied to a supporting beam in the greenhouse roof works just as well.

Make sure the plants are well tied to the string or cane – without choking the stem – and that the weight of the tomatoes does not pull them down.

Growing Outdoors:
Growing tomatoes outdoors is the privilege of those that live in warmer climates – unlike Scotland ! The principle however is pretty much the same. The differences are mainly that the overall temperature cannot be maintained as well, and that outdoor tomatoes are more susceptible to the predations of pest's such as caterpillars, slugs etc. In fact the main difference is that they are more exposed and so vulnerable you could say.

Feeding the tomatoes is the same as indoors, although if you have a good fertile soil then it may not be so often. Insect control is of course on-going, and birds will have to be kept at bay by garden mesh. As for the predations of Rabbits, they do not seem so keen on tomato plants, but they will chew on them just for the hell of it – so best to keep them away by any means possible.

Harvesting:
Tomatoes are best eaten within days of plucking in order to get the best flavour possible; however if storing simply place in a paper bag and keep stem-up in a cool dark place.
Contrary to popular belief green tomatoes do not ripen well on a window sill – they are more prone to rotting.

Best time to pick is when the tomato is firm and bright red (or yellow?) in color – depending on the variety of course.
They can be kept in the fridge for a few days, but in doing so you will lose much of the natural tomato flavour

Authors Note:

Finally I would just like to say THANK YOU for purchasing my book. I truly hope that it has been of value, and has met your expectations with regard to introducing the Lasagna gardening concept.

There is of course always more to learn on any given subject, and I would encourage you to (if you have not already done so) to investigate the many other ways to grow vegetables with minimal hassle and yet to get great results.

Apart from the Lasagna method described, these no-dig techniques include Straw/Hay Bale Gardening, Raised Bed Gardening, Square Foot Gardening, Container Gardening, Hot Bed Gardening and Vertical gardening.

All these methods can be super-productive and simple to set up and operate. As you might guess I just happen to have books on most of the subjects listed, and would be delighted if you decided to try these techniques for yourself.

Meanwhile I wish you all the best with your gardening efforts, and would encourage you to visit my blog

www.planterspost.com where you will find lots of free advice on many aspects of growing vegetables in small spaces.